

WHAT IS CLAIMED IS:

1. An apparatus comprising a receiving unit having
a receiving portion which can removably receive a
5 cartridge, said receiving unit having a movably supported
head with spaced read and write portions, said receiving
unit being responsive to insertion into said receiving
portion of a cartridge having an information storage
medium for moving said head adjacent and relative to the
10 storage medium while using said head to write selected
information to the storage medium and to then read back
said selected information in order to determine
compensation information relating to said spacing between
said read and write portions, said receiving unit
15 subsequently effecting writing of information with said
head as a function of said compensation information.

2. An apparatus according to Claim 1, including a
cartridge which can be removably inserted into said
20 receiving portion of said receiving unit, and which
includes a rotatable information storage medium.

3. An apparatus according to Claim 1, wherein said
receiving unit effects said subsequent writing of
25 information in a manner which includes converting a
desired position for said write portion into a
corresponding position for said read portion that
compensates for said spacing between said read and write
portions, and then positioning said read portion at said
30 corresponding position while writing the information to
said storage medium with said write portion.

4. An apparatus according to Claim 1, wherein said receiving unit effects said subsequent writing of information by using a predetermined translation to determine a nominal position for said head, and by then
5 using said compensation information to adjust said nominal position in order to determine an actual position for said head.

5. An apparatus according to Claim 4, wherein said
10 predetermined translation includes use of a predetermined polynomial.

6. An apparatus according to Claim 4, wherein said compensation information includes a scaling value, said
15 receiving unit multiplying said nominal position by said scaling value.

7. An apparatus according to Claim 4, wherein said compensation information includes a scaling value and an
20 offset value, said receiving unit multiplying said nominal position by said scaling value and then adding said offset value to the result of the multiplication.

8. An apparatus according to Claim 4, wherein said
25 compensation information includes an offset value, said receiving unit adding said offset value to a value which is a function of said nominal position.

9. An apparatus according to Claim 1,
wherein said selected information includes first and
second portions which are respectively written to and
5 read from respective spaced locations on a storage medium
in a cartridge; and

wherein said receiving unit determines said
compensation information as a function of said first and
second portions as read back with said head.
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10. An apparatus according to Claim 9,
wherein said compensation information includes a
scaling value and an offset value; and

wherein said receiving unit effects said subsequent
15 writing of information by using a predetermined
translation to determine a nominal position for said
head, by multiplying said nominal position by said
scaling value, and by then adding said offset value to
the result of the multiplication.

20 11. An apparatus according to Claim 1, wherein said
reading back of said selected information includes:

searching for a location of said selected
information by effecting successive reads with said head
25 in respective different search positions;

fitting a curve to a characteristic of said selected
information as read in three of said search positions;
and

treating one of a minimum and maximum of said curve
30 as corresponding to the position of a center of said
selected information.

12. An apparatus according to Claim 11, wherein
said characteristic of said selected information for the
centermost of said three search positions is one of
greater than and less than said characteristic of said
5 selected information for each of the outermost of said
three search positions.

13. An apparatus according to Claim 11, wherein
said receiving unit carries out said successive reads in
10 successive first and second stages, the spacing between
adjacent search positions of said head being larger in
said first stage than in said second stage.

14. An apparatus according to Claim 13, wherein
15 said receiving unit carries out said first stage of said
search until the occurrence of a read in which said
characteristic of said selected information satisfies a
specified criteria, and according to a search pattern in
which said receiving unit effects a read with said head
20 in a first of said selected positions and then effects
successive said reads by alternately positioning said
head on opposite sides of said first position with a
progressively increasing distance from said first
position.

15. An apparatus according to Claim 13, wherein
said receiving unit carries out said second stage of said
search by effecting successive said reads while moving
5 said head in a selected direction to successive said
search positions, until the occurrence of a read in which
the direction of change in said characteristic of said
selected information between successive said reads
undergoes a reversal, the most recent three search
10 positions then being used as said three search positions
on which said curve fitting is based.

16. A method of operating a receiving unit having a cartridge receiving portion and having a head with spaced read and write portions, said method including:

5 responding to insertion into said receiving portion of a cartridge having an information storage medium by moving said head adjacent and relative to the storage medium while using said head to write selected information to the storage medium and to then read back
10 said selected information;

 using the selected information as read back with said head to determine compensation information relating to said spacing between said read and write portions; and

 subsequently effecting writing of information with
15 said head as a function of said compensation information.

17. A method according to Claim 16, including effecting said subsequent writing of information in a manner which includes converting a desired position for
20 said write portion into a corresponding position for said read portion that compensates for said spacing between said read and write portions, and then positioning said read portion at said corresponding position while writing information to said storage medium with said write
25 portion.

18. A method according to Claim 16, including effecting said subsequent writing of information by using a predetermined translation to determine a nominal
30 position for said head, and by then using said compensation information to adjust said nominal position in order to determine an actual position for said head.

19. A method according to Claim 18, wherein said using of said predetermined translation includes using a predetermined polynomial.

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20. A method according to Claim 18, including configuring said compensation information to include a scaling value, said using of said compensation information to adjust said nominal position including multiplying said nominal position by said scaling value.

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21. A method according to Claim 18, including configuring said compensation information to include a scaling value and an offset value, said using of said compensation information to adjust said nominal position including multiplying said nominal position by said scaling value and then adding said offset value to the result of the multiplication.

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22. A method according to Claim 18, including configuring said compensation information to include an offset value, said using of said compensation information to adjust said nominal position including adding said offset value to a value which is a function of said nominal position.

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23. A method according to Claim 16,
including configuring said selected information to
include first and second portions which are respectively
5 written to and read from respective spaced locations on a
storage medium of a cartridge; and

wherein said receiving unit determines said
compensation information as a function of said first and
second portions as read back with said head.

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24. A method according to Claim 23,
including configuring said compensation information
to include a scaling value and an offset value; and
effecting said subsequent writing of information by
15 using a predetermined translation to determine a nominal
position for said head, by multiplying said nominal
position by said scaling value, and by then adding said
offset value to the result of the multiplication.

20 25. A method according to Claim 16, wherein said
reading back of said selected information includes:

searching for a location of said selected
information by effecting successive reads with said head
in respective different search positions;

25 fitting a curve to a characteristic of said selected
information as read in three of said search positions;
and

treating one of a minimum and maximum of said curve
as corresponding to the position of a center of said
30 selected information.

26. A method according to Claim 25, including selecting said three search positions so that said characteristic of said selected information for the centermost of said three search positions is one of greater than and less than said characteristic of said selected information for each of the outermost of said three search positions.

27. A method according to Claim 25, including carrying out said successive reads in successive first and second stages, the spacing between adjacent search positions of said head being larger in said first stage than in said second stage.

28. A method according to Claim 27, including carrying out said first stage of said search until the occurrence of a read in which said characteristic of said selected information satisfies a specified criteria, and according to a search pattern which includes effecting a read with said head in a first of said selected positions and then effecting successive said reads by alternately positioning said head on opposite sides of said first position with a progressively increasing distance from said first position.

29. A method according to Claim 27, including
carrying out said second stage of said search by
effecting successive said reads while moving said head in
5 a selected direction to successive said search positions,
until the occurrence of a read in which the direction of
change in said characteristic of said selected
information between successive said reads undergoes a
reversal, the most recent three search positions then
10 being used as said three search positions on which said
curve fitting is based.

30. An apparatus, comprising:

an information storage medium;

a head with spaced read and write portions;

5 a head moving portion which can effect movement of
said head relative to and adjacent said storage medium;
and

10 a control portion cooperable with said head and said
head moving portion, said control portion having an
operational mode in which said control portion causes
said head to write information to said storage medium,
wherein in said operational mode said control portion
converts, as a function of a polynomial, a desired
position for said write portion into a corresponding
15 position for said read portion which compensates for said
spacing between said read and write portions, and then
positions said read portion at said corresponding
position while writing information to said storage medium
with said write portion.

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31. A method of operating an apparatus which includes an information storage medium and a head with spaced read and write portions, comprising:

5 converting, as a function of a polynomial, a desired position for said write portion into a corresponding position for said read portion which compensates for said spacing between said read and write portions; and

10 thereafter positioning said head adjacent said storage medium with said read portion at said corresponding position while writing information to said storage medium with said write portion.

32. An apparatus, comprising:

an information storage medium;

a head with spaced read and write portions;

5 a head moving portion which can effect movement of
said head relative to and adjacent said storage medium;
and

10 a control portion cooperable with said head and said
head moving portion, said control portion being operable
to use said head to write selected information to said
storage medium and to then read back said selected
information in order to determine compensation
information relating to said spacing between said read
and write portions, and said receiving unit subsequently
15 effecting writing of information to said storage medium
with said head as a function of said compensation
information.

33. A method of operating an apparatus which includes an information storage medium and a head with spaced read and write portions, comprising:

5 moving said head adjacent and relative to said storage medium while using said head to write selected information to said storage medium and to read back said selected information;

10 using the selected information as read back with said head to determine compensation information relating to said spacing between said read and write portions; and

thereafter writing information to said storage medium with said head as a function of said compensation information.

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